

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 59

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte KAZUHIKO YAMAMOTO, SHUNJI MORI, TERUO TSUCHIYA,  
SEIICHI SAITO, and KEIICHI ANAHARA

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Appeal No. 1999-2027  
Application No. 08/452,500

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HEARD: July 12, 2001

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Before JERRY SMITH, FLEMING, and GROSS, Administrative Patent Judges.

GROSS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claim 1, which is the only claim pending in this application.

Appellants' invention relates to a pattern recognition system in which outermost points of a character are extracted by extending rays from a common starting point on the contour of the character in a predetermined set of angular directions

until the rays intersect farthest portions of the contour, the intersections defining the outermost points. A calculating means associates the outermost points with a series of contour lines, and a segmenting means extracts feature parameters of each contour line by determining whether the contour line is a convex line segment, a concave line segment, or a hole segment. Last, a matching means compares the feature parameters with feature vectors of a dictionary to determine the character pattern. Claim 1 is illustrative of the claimed invention, and it reads as follows:

1. A pattern recognition system wherein a contour tracer unit traces the contour of a two-dimensional character pattern of a character scanned by an optical scanner and stored in the form of a binary quantized signal in a two-dimensional memory, comprising:

a first extraction means for extracting the outermost points in a plurality of predetermined directions, said outermost points being determined by extending a predetermined number of rays, in a predetermined set of angular directions, from a common starting point on said contour of said character, until farthest portions of the contour of the character are intersected by said rays at intersections, respectively, said intersections defining said outermost points, respectively;

calculating means including an information extracting means for extracting information from an output signal of said first extraction means and for associating said output signal with a series of contour lines forming said contour, and a segmenting means for segmenting, in the order of tracing of

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said contour lines, each of said contour lines into one of a convex line segment, a concave line segment, and a hole segment so as to extract feature parameters of each of said contour lines;

matching means for comparing and attempting to match said feature parameters of those of said line segments which are determined not to be convex segments lesser than a predetermined length with a plurality of predetermined feature vectors of a dictionary so as to decide said two-dimensional character pattern.

The prior art reference of record relied upon by the examiner in rejecting the appealed claim is:

Forsen et al. (Forsen)	4,097,847	Jun. 27,
1978		

Claim 1 stands rejected under 35 U.S.C. § 112, first paragraph, as being non-enabled by the original disclosure.

Claim 1 stands rejected under 35 U.S.C. § 102(b) as being anticipated by Forsen.

Reference is made to the Examiner's Answer (Paper No. 53, mailed October 27, 1998) for the examiner's complete reasoning in support of the rejections, and to appellants' Brief (Paper No. 52, filed August 10, 1998) and Reply Brief (Paper No. 54, filed December 28, 1998) for appellants' arguments thereagainst.

OPINION

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We have carefully considered the claim, the applied prior art reference, and the respective positions articulated by appellants and the examiner. As a consequence of our review, we will reverse both the written description/enablement rejection and also the anticipation rejection of claim 1.

The examiner first rejects claim 1 as being based on a specification that "fail[s] to provide an adequate written description of his invention, and fail[s] to adequately teach how to make and/or use the invention" (see Paper No. 37, page 2). The examiner points to several grammatical errors in the specification and concludes (Paper No. 37, page 5) that "[a] person of ordinary skill in the art would be burdened by unreasonable experimentation and delay in trying to construct the invention based on the present disclosure."

According to Vas-Cath, Inc. v. Mahurkar, 935 F.2d 1555, 1563/64, 19 USPQ2d 1111, 1117 (Fed. Cir. 1991),

35 U.S.C. § 112, first paragraph, requires a "written description of the invention" which is separate and distinct from the enablement requirement. The purpose of the "written description" requirement is broader than to merely explain how to "make and use"; the applicant must also convey with reasonable clarity to those skilled in the art that, as of the filing date sought, he or she was in possession of the invention. The

invention is, for purposes of the "written description" inquiry, whatever is now claimed.

The written description requirement generally comes into play after an amendment to the claims. However, the examiner has not pointed to any claim limitation that was added by amendment and considered to be new matter. Consequently, we find no basis for the examiner's assertion of an inadequate written description.

As to the enablement part of 35 U.S.C. § 112, first paragraph, the examiner has not pointed to any element in the claim which the disclosure fails to adequately teach how to make and/or use. We find that, though numerous, the grammatical and spelling errors in the specification do not rise to the level of failing to provide an enabling disclosure. As pointed out by appellants (Brief, page 5), Figure 1A shows generally, the claimed extracting circuit, calculating unit, and matching unit, and Figure 1B shows the steps of extracting outermost points, extracting the line segments, and matching with the dictionary.

More specifically, Figure 2 shows the calculation of comparison values for creating the list of outermost points.

Further, in the specification (page 15), appellants disclose that an outermost point is determined in each of 16 directions  $r$  from the starting point  $S$ . This is also shown in Figure 4. Figure 22 shows a specific construction of an outermost point detecting circuit. Thus, the first extraction means is clearly disclosed.

Figures 4, 5, and 10 together with the description on pages 16 and 17 of the specification show and explain how contour lines are segmented into one of a concave line segment or a convex line segment. A similar disclosure on pages 21-22 explains the determination of hole segments. Also, Figure 25 illustrates a particular construction of the calculating unit. Therefore, the calculating and segmenting means are fully disclosed.

As to the claimed matching means, Figure 27 shows a specific construction and Figure 30 shows a flow of operations of the matching unit. In addition, the description beginning at page 23 explains how a degree of matching with each category feature is determined and how matching is effected. Accordingly, all of the elements of claim 1 are fully disclosed in such a way as to enable one of ordinary skill in

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the art to make and/or use the claimed invention.

Consequently, we cannot sustain the rejection of claim 1 under 35 U.S.C. § 112, first paragraph.

Regarding the anticipation rejection of claim 1, "[i]t is axiomatic that anticipation of a claim under § 102 can be found only if the prior art reference discloses every element of the claim." In re King, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986); See also Lindemann Maschinenfabrik [GMBH] v. American Hoist and Derrick [Co.], 730 F.2d 1452, 1457, 221 USPQ 481, 485 (Fed. Cir. 1984). Forsen does disclose the general concepts recited in claim 1 of extracting outermost points, calculating and segmenting the contour lines, and matching the contour lines to a dictionary, as indicated by the examiner (Paper No. 37, pages 6-7). However, claim 1 includes more specific limitations that Forsen fails to disclose.

For example, claim 1 recites that the outermost points are "determined by extending a predetermined number of rays, in a predetermined set of angular directions, from a common starting point on said contour of said character, until farther portions of the contour are intersected by said rays."

The examiner (Answer, pages 3-4) asserts that Figure 14 of Forsen meets this limitation, since Figure 14 shows "outermost points, e.g. C1 at (C1X, C1Y) and C2 at (C2X, C2Y), are extracted. These points are the furthest portions of the character contour which is intersected by the lines connecting these points from a common starting point B2 at (B2X, B2Y)." However, Figure 14 relates to the extraction of parameter features after the outermost points have been determined. On the other hand, the perimeter trace of Forsen is accomplished by finding starting points on the perimeter and incrementally moving plus or minus one or zero scan units as shown in Figures 6 and 7. Forsen clearly does not extend rays, in a predetermined set of angular directions, from a common starting point on the contour of the character, until farther portions of the contour are intersected by said rays to find the outermost points. As Forsen fails to meet each and every limitation of the claim, Forsen cannot anticipate claim 1. Consequently, we cannot sustain the rejection of claim 1 under 35 U.S.C. § 102.



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CONCLUSION

The decision of the examiner rejecting claim 1 under both 35 U.S.C. § 112, first paragraph, and 35 U.S.C. § 102(b) is reversed.

REVERSED

JERRY SMITH	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
MICHAEL R. FLEMING	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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ANITA PELLMAN GROSS	)	
Administrative Patent Judge	)	

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